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09/328,306	06/08/1999	PAUL BERKOWITZ	16296.705	6592

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EXAMINER

MOORE, JAMES K

ART UNIT	PAPER NUMBER
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2686

DATE MAILED: 09/17/2003

11

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/328,306

Applicant(s)

BERKOWITZ ET AL.

Examiner

James K Moore

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18,20-33 and 35-51 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 17,18,20-32,40-43,49 and 50 is/are allowed.
- 6) ☒ Claim(s) 1-16,33,35-39,44,45,47,48 and 51 is/are rejected.
- 7) ☒ Claim(s) 46 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 June 1999 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. The indicated allowability of claims 9-11 is withdrawn in view of Alperovich (U.S. Patent No. 5,832,382). Rejections based on this reference follow.
2. Applicant's arguments with respect to claims 12, 13, 15, 16, 33, 35-39, 44, 45, 47, and 48 have been considered but are moot in view of the new ground(s) of rejection.
3. Applicant's arguments filed August 6, 2003 with respect to claim 14 have been fully considered but they are not persuasive.

Regarding claim 14, the applicant argues that the specification describes the limitation "wherein communication between the circuitry coupled to the set of interfaces and the subscriber takes place entirely over a land line system", and cites page 23, lines 2-8 to support this assertion. The Applicant's invention is primarily directed to a wireless communication system, however the cited section of the specification describes one embodiment of the invention in which the interfaces are coupled to a cable network. The applicant also asserts that non-wireless networks are known by those skilled in the art, thus, one skilled in the art would be sufficiently enable to make and/or use the invention of claim 14 in view of Applicant's application as filed. See page 21 of the Amendment. However, it is the opinion of the Examiner that the concept of assigning a cable subscriber to a region, and allowing the cable subscriber to move to another region and communicate with a PSTN is not known by those skilled in the art.

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The Applicant is invited to provide references that prove otherwise. Therefore, it is the Examiner's opinion that the specification does not enable one skilled in the art to make and/or use the invention of claim 14, and therefore the 112, 1st paragraph rejection of claim 14 stands, as repeated below.

Claim Objections

4. Claims 33 and 36 are objected to because of the following informalities: in claim 33, line 13, "and" should be changed to "in", and in claim 36, line 15, "and" should be changed to "in". Appropriate correction is required.

Claim Rejections - 35 USC § 112

5. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

6. Claim 14 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claim 14 includes the limitation "wherein communication between the circuitry coupled to the set of interfaces and the subscriber takes place entirely over a land line system". The specification describes one embodiment of the invention in which the set of interfaces are coupled to a cable network. See page 23, lines 3-8. However, the

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specification does not explain how a cable subscriber may be located in a region other than a region served by an interface to which the cable subscriber and still communicate with the PSTN.

7. Claims 1-8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the limitation "the circuitry coupled to the set of interfaces" in lines 13-14. This limitation is indefinite because it is unclear whether it refers to the "circuitry coupled to radio transceivers" in line 4, or the "circuitry that... routes a call" in lines 7-9.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9. Claims 9-11 are rejected under 35 U.S.C. 102(a) as being anticipated by Alperovich.

Regarding claim 9, Alperovich discloses a communication system. The system comprises a first network (PSTN) dispersed throughout a national area and a second network (a wireless communication network) coupled to the first network by interfaces (MSCs) in a plurality of geographic regions in the national area. The second network includes radio transceivers for communicating with subscribers located in the geographic regions. Each subscriber has a home region, and various subscribers may be located outside of their home regions. The system also comprises circuitry (circuitry in the LA1 MSC) that routes all communication between a subscriber (10a) and the first network through an interface (LA1 MSC) between the first network and the second network in the subscriber's home region, if the region served by LA1 MSC is subscriber 10a's home region and if subscriber 10a is located in that region. See Figure 2.

Regarding claim 10, Alperovich discloses all of the limitations of claim 9, and also discloses that the first network comprises a PSTN. See Figure 2.

Regarding claim 11, Alperovich discloses all of the limitations of claim 9, and also discloses that the circuitry (LA1 MSC) that routes all communication includes a computer coupled to bearer and control channels coupled to the interfaces for routing, between the interfaces, calls with subscriber (such as subscriber 10b) located outside their home regions. See Figure 3 and col. 4, line 66 through col. 5, line 55.

10. Claims 12, 16, 33, 36-39, 44, 47, and 48 are rejected under 35 U.S.C. 102(a) as being anticipated by Kulkarni et al. (U.S. Patent No. 5,862,481).

Regarding claim 12, Kulkarni discloses a communication system comprising a set of interfaces (MSCs) coupled to a PSTN. The interfaces serve various geographic regions within a national area. The system also comprises circuitry (switches within the PSTN) coupled to the interfaces that, for communication between the PSTN and a subscriber located in a region (serving system) in the national area other than a region (home system) served by an interface to which the subscriber is assigned, causes the communication to take place via the interface to which the subscriber is assigned. See Figure 3 and col. 2, line 40 through col. 3, line 4.

Regarding claim 16, Kulkarni discloses all of the limitations of claim 12, and also discloses that communication between the circuitry and the subscriber takes place partially by radio transmission. See Figure 3.

Regarding claim 33, Kulkarni discloses a communication system. The system comprises a set of interface devices (MSCs) coupled to a PSTN. The interface devices serve various geographic regions. The system also comprises radio transceivers (base stations) coupled to the interface devices. The radio transceivers are for communication with mobile subscribers, and the mobile subscribers each have a home region (GSN home system). The system also comprises circuitry (IMSC) coupled to interfaces that, for a call involving the PSTN and a mobile subscriber located outside the mobile subscribers home region, routes the call through a path including an interface device that serves in the mobile subscriber's home region. The path between the subscriber and the interface device in the mobile subscriber's home region includes a portion of the PSTN. The portion of the path through the PSTN between the subscriber

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and the interface device in the mobile subscriber's home region is obtained based on a routing number assigned to the interface that serves the region (IS-41 serving system) in which the subscriber is currently located. See Figure 3 and col. 2, line 40 through col. 3, line 4.

Regarding claim 36, Kulkarni discloses a communications system. The system comprises a set of interface devices (MSCs) coupled to a PSTN. The interface devices service various geographic regions. The system also comprises, coupled to each interface device, a set of devices (controllers inherently in the base stations) for communication with radio transceivers (within the base stations). Each of these devices is coupled to radio transceivers. The system also comprises circuitry (switches within the PSTN) coupled to the interface devices that, with respect to calls from the PSTN to mobile subscribers, has the same type of interface (a landline interface) as the devices for communicating with the radio transceivers. If a call from the PSTN through an interface device (MSC in the home system) is directed to a subscriber in an area (the serving system) not serviced by the devices for communicating with the radio transceivers coupled to the interface, the circuitry routes the call through a path including the PSTN to an interface device coupled to a set of devices (base stations) for communicating that service an area in which the subscriber is located. The portion of the path through the PSTN between the subscriber and the interface device in the mobile subscriber's home region is obtained based on a routing number (TLDN) assigned to the interface that serves the region in which the subscriber is currently located. See Figure 7 and col. 7, line 53 through col. 8, line 17.

Regarding claim 37, Kulkarni discloses all of the limitations of claim 36, and also discloses that the circuitry coupled to the interface devices routes the call without interrogating a centralized database. See Figure 7 and col. 8, lines 11-17.

Regarding claim 38, Kulkarni discloses all of the limitations of claim 36, and also discloses that the circuitry coupled to the interface devices routes the call without interrogating a HLR or VLR. See Figure 7 and col. 8, lines 11-17.

Regarding claim 39, Kulkarni discloses all of the limitations of claim 36, and it is inherent that the set of devices for communicating with the radio transceivers (radio ports) comprises radio port controllers (or base station controllers).

Regarding claim 44, Kulkarni discloses a method of modifying an existing telephone network (PSTN). The method comprises locating interface devices (MSCs) in various geographic regions of the telephone network within a national area, and coupling the interface devices to the telephone network in the various geographic regions. The interface device are coupled to circuitry (base stations) coupled to radio transceivers that service mobile subscribers that may be located in the various geographic regions. The mobile subscribers are each assigned to a respective geographic region. The interface devices are coupled to circuitry (IMSC) that, when a subscriber is located in a region (serving system) in the national area other than in a geographic region (home system) to which the subscriber is assigned, routes a call with the mobile subscriber through a path including a radio transceiver in the region in which the mobile subscriber is currently located and an interface device in the region to which the subscriber is assigned. See Figure 3 and col. 2, line 40 through col. 3, line 4.

Regarding claim 47, Kulkarni discloses a communications system comprising a set of interface devices (MSCs) coupled to a PSTN. The interface devices are located in various geographic regions in a national area. The system also comprises radio transceivers (base stations) coupled to the interface devices. The radio transceivers communicate with mobile subscribers, which each have a home region in the national area. The system also comprises circuitry (IMSC) coupled to the interfaces that, for a call involving the PSTN and a mobile subscriber located outside the mobile subscriber's home region, routes the call through a path including an interface device in the mobile subscriber's home region. The path between the subscriber and the interface device in the mobile subscriber's home region includes a portion of the PSTN. See Figure 3 and col. 2, line 40 through col. 3, line 4.

Regarding claim 48, Kulkarni discloses a communications system comprising a set of interface devices (MSCs) coupled to a PSTN. The interface devices serve various geographic regions. The system also comprises radio transceivers (base stations) coupled to the interface devices. The radio transceivers communicate with mobile subscribers, which each have a home region. The system also comprises circuitry (switches within the PSTN) coupled to the interface devices that, for a call involving the PSTN and a mobile subscriber located outside the mobile subscriber's home region, routes the call through a path including an interface device in the mobile subscriber's home region. The circuitry inherently comprises computer systems located in different areas (e.g., different telephone exchanges), and a computer system located

in each area routes calls between the interfaces in the area. See Figure 3 and col. 2, line 40 through col. 3, line 4.

Claim Rejections - 35 USC § 103

11. Claims 13 and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kulkarni et al. in view of Zhang et al. (U.S. Patent No. 6,104,915) and Newton's Telecom Dictionary.

Regarding claim 13, Kulkarni discloses all of the limitations of claim 12, but does not disclose that the circuitry (switches within the PSTN) coupled to the set of interfaces (MSCs) is coupled to the interfaces via an E1 interface. However, Zhang teaches that a PSTN is typically coupled to MSCs via an E1 interface. See col. 7, lines 48-54.

Newton's Telecom Dictionary further teaches that, when a high-capacity link is required (such as a link between a PSTN and MSCs), it is much less expensive to utilize a single T-1 (or, in Europe, an E-1) link rather than individual phone lines. See pages 272, 762, and 763. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Kulkarni in view of the teachings of Zhang and Newton's Telecom Dictionary, such that the circuitry coupled to the set of interfaces is coupled to the interfaces via an E1 interface, in order to minimize the costs of the coupling.

Regarding claim 45, Kulkarni discloses all of the limitations of claim 44, but does not disclose that the path between the radio transceiver and the interface device (MSC) in the region to which the subscriber is assigned includes an E1 link. Kulkarni does

disclose, however, that the path includes couplings between the PSTN and MSCs. See Figure 3.

Zhang teaches that a PSTN is typically coupled to MSCs via an E1 interface. See col. 7, lines 48-54. Newton's Telecom Dictionary further teaches that, when a high-capacity link is required (such as a link between a PSTN and MSCs), it is much less expensive to utilize a single T-1 (or, in Europe, an E-1) link rather than individual phone lines. See pages 272, 762, and 763. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Kulkarni in view of the teachings of Zhang and Newton's Telecom Dictionary, such that the couplings between the PSTN and MSCs include E1 links, in order to minimize the costs of the couplings.

12. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kulkarni et al. in view of Focarile et al. (U.S. Patent No. 5,434,854).

Regarding claim 15, Kulkarni discloses all of the limitations of claim 12, but does not disclose that the communication system includes circuitry coupled to the set of interfaces that converts a signal from the subscriber to packets before passing the signal to the PSTN. However, Focarile discloses a communication system that includes circuitry coupled to a set of interfaces (switches) that converts a signal from the subscriber to packets before passing the signal to the PSTN. See col. 4, line 35 through col. 5, line 20. In addition, one of ordinary skill in the art recognizes that an advantage of packet-switched communication is that it makes more efficient use of data lines than circuit-switched communication. Therefore, it would have been obvious to

one of ordinary skill in the art at the time of the invention to modify Kulkarni with Focarile, such that the communication system includes circuitry coupled to the set of interfaces that converts a signal from the subscriber to packets before passing the signal to the PSTN, in order to make more efficient use of the system's data lines.

13. Claims 35 and 51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kulkarni et al. in view of Bahl et al. (U.S. Patent No. 6,385,454).

Regarding claim 35, Kulkarni discloses all of the limitations of claim 33, but does not disclose that a control bus is included in the circuitry (Interworking Mobile Switching Center IMSC) that routes the call through a path including the interface device that serves the mobile subscriber's home region, or that the control bus is coupled to an interface device (MSC) to the PSTN that serves the subscriber's home region and an interface (MSC) to the PSTN that serves a region in which the subscriber is located.

However, Bahl discloses a Mobile Switching Center (MSC) architecture which comprises a control bus (system bus 69) that functions to couple all of the system components of the MSC to the MSC's processing unit (65). Among the system components is a network interface 113 which couples the MSC to other MSCs. See Figure 5; col. 9, line 66 through col. 10, line 26; and col. 10, lines 56-67. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Kulkarni with Bahl, such that the IMSC includes a control bus which is coupled to the MSC serving the subscriber's home region and the MSC serving the region in which the

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subscriber is located, in order to allow the system components of the IMSC and the home and serving MSCs to communicate with the IMSC's processing unit.

Regarding claim 51, Kulkarni discloses a communication system. The system comprises a set of interface devices (MSCs) coupled to a PSTN. The interface devices serve various geographic regions. The system also comprises radio transceivers (base stations) coupled to the interface devices. The radio transceivers are for communication with mobile subscribers, and the mobile subscribers each have a home region (GSN home system). The system also comprises circuitry (IMSC) coupled to interfaces that, for a call involving the PSTN and a mobile subscriber located outside the mobile subscribers home region, routes the call through a path including an interface device that serves in the mobile subscriber's home region. The path between the subscriber and the interface device in the mobile subscriber's home region includes a portion of the PSTN. See Figure 3 and col. 2, line 40 through col. 3, line 4. Kulkarni does not disclose that a control bus is included in the circuitry (IMSC) that routes the call through a path including the interface device that serves the mobile subscriber's home region, or that the control bus is coupled to an interface device (MSC) to the PSTN that serves the subscriber's home region and an interface (MSC) to the PSTN that serves a region in which the subscriber is located.

However, Bahl discloses a Mobile Switching Center (MSC) architecture which comprises a control bus (system bus 69) that functions to couple all of the system components of the MSC to the MSC's processing unit (65). Among the system components is a network interface 113 which couples the MSC to other MSCs. See

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Figure 5; col. 9, line 66 through col. 10, line 26; and col. 10, lines 56-67. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Kulkarni with Bahl, such that the IMSC includes a control bus which is coupled to the MSC serving the subscriber's home region and the MSC serving the region in which the subscriber is located, in order to allow the system components of the IMSC and the home and serving MSCs to communicate with the IMSC's processing unit.

Allowable Subject Matter

14. Claims 1-8 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action.

15. Claims 17, 18, 20-32, 40-43, 49, and 50 are allowed.

16. Claim 46 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ken Moore, whose telephone number is (703) 308-6042. The examiner can normally be reached on Monday-Friday from 8:30 AM - 5:00 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marsha Banks-Harold, can be reached at (703) 305-4379.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

Ken Moore

9/5/03

JKM

Marsha D Banks-Harold
MARSHA D. BANKS-HAROLD
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TECHNOLOGY CENTER 2600